

a work table arranged in said process chamber and having a support face facing said window plate, said substrate being mounted on said support face, with said process region facing said window plate;

a main supply for supplying a process gas between said window plate and said substrate mounted on said support face, at least part of said process gas being transformed into said plasma;

an induction electrode, for generating electromagnetic field between (1) said window plate and (2) said substrate mounted on said support face, to induce generation of said plasma, and including a coil arranged in said auxiliary chamber and facing said window plate;

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cont a power supply section for applying a high frequency voltage to said coil;

an auxiliary exhaust pump for exhausting and setting said auxiliary chamber to a vacuum; and

a pressure controller connected to said auxiliary exhaust pump for keeping a pressure difference between pressures in said process and auxiliary chambers at a minimum value.

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B8 85. (Amended) An apparatus for processing a process region of a substrate, using a plasma, comprising:

A2 a container substantially formed of a conductive material;

a partition plate supported by said container and defining an air-tight process container portion and an air-tight auxiliary container portion, and having a window plate made of dielectric;

a work table arranged in said process container portion and having a support face facing said window plate, the substrate being mountable on said support face with the process region facing said window plate;

a main supply for supplying a process gas between said window plate and the substrate mounted on said support face, at least part of the process gas being transformable into the plasma;

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an antenna including a planar spiral coil having a quadrilateral outer configuration for generating an electromagnetic field between said window plate and the substrate mounted on said support face to induce generation of the plasma, arranged in said auxiliary container portion and facing said window plate;

a power supply section for applying a high frequency voltage to said antenna;
and

a pressure controller controlling a pressure difference between a pressure in said process container portion and a pressure in said auxiliary container portion lower than a predetermined value.

100. (Amended) An apparatus for processing with a plasma a process region of a substrate, comprising:

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a container;

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a dielectric window supported by said container and defining a first container portion and a second container portion separated by said dielectric window, said first container portion and said second container portion each having substantially the same diameter;

a table for supporting the substrate in said first container portion to face said window;

a first supply for supplying a process gas to said first container portion;
an antenna for generating an electromagnetic field between said window and the
substrate supported on said table to induce generation of the plasma, said antenna
being provided in said second container portion proximate said window.
a power supply for supplying a voltage to said antenna;
a second supply for supplying an auxiliary gas to said second container portion;
wherein a pressure difference between a pressure in said first container portion
and a pressure in said second container portion is controllable below a predetermined
value to reduce a load caused by the pressure difference on said dielectric window.

155. (Amended) The apparatus according to claim 138, further comprising a
lower electrode arranged in said table and a power supply for applying a high frequency
potential to said lower electrode.

REMARKS

Claims 1-164 are pending in this application. No claims have been cancelled.

Claim 85 has been amended to include the phrase "including a planar spiral coil having a quadrilateral outer configuration" after "antenna" at line 13.

Claim 100 has been amended to include the phrase ", said first container portion and said second container portion each having substantially the same diameter" after the word "window" at line 5.

Claim 155 has been amended by deleting the word "work" at line 2.

The Examiner objected to the reissue declaration as defective and therefore rejected claims 1-164 under 35 U.S.C. § 251. A revised reissue declaration is attached. The revised declaration states per 37 C.F.R. § 1.63(b)(1), that the persons signing the